ABSTRACT

Aim: To determine the seroprevalence of Hepatitis C virus among alcoholics in Zawan District of Jos South Local Government Area, Plateau state, Nigeria.

Methods: Two hundred alcoholics and non alcoholics at Zawan District of Jos South L.G.A, of Plateau State, Nigeria were screened for Hepatitis C virus antibodies using the ELISA kits. Structured questionnaire was employed to obtain demographic data of study subjects.

Results: This study shows that out of 136 alcoholic subjects 58(42.6%) were positive for HCV while only 4(6.2%) of the 64 non-alcoholic subjects were positive (Table1). This indicates higher risk of HCV infection in alcoholic subjects compared to non-alcoholic subjects. Out of 80 males screened 27(33.3%) were positive for HCV while of the 119 females screened 35(29.4%) were positive. This indicates no significant difference in prevalence with regard to gender in this study. This could be because male and female in this study area are free to take alcohol without restriction. 15(24.2%) of 62 subjects positive for HCV have elevated levels of ALT while all the 138 subjects negative for HCV have normal ALT value.

Conclusion: HCV causes elevated ALT level. This could be due to liver damage

Key words: Hepatitis C virus, Alcoholics, ALT

INTRODUCTION

Hepatitis is an inflammation of the liver that is characterized by jaundice, liver enlargement, abdominal and gastric discomfort abnormal liver function and other symptoms. This can be caused by a virus, excessive alcohol intake, toxic chemical and drugs (HCV) (Zignego et al., 2006). Studies have shown that hepatitis C virus account for between 75% to 95% post transfusion hepatitis (Zuckerman and Thomas,1993). Hepatitis can have numerous causes such as from excessive alcohol consumption or infection by certain bacteria or viruses. One common cause of hepatitis is infection with one of several types of viruses. Almost one-third of alcoholics with clinical symptoms of liver disease have been infected with HCV which is four times the rate of HCV infection found in alcoholics who do not have liver disease (Mendenhall et al., 1991; Takase et al., 1993; Coelho-Little, 1995; Ndako et al., 2010).

MATERIALS AND METHODS

Subjects
Two hundred Alcoholics and non alcoholics subjects at Zawan District of Jos South L.G.A, of
Plateau State, Nigeria were screened for Hepatitis C virus antibodies using the ELISA kits. Structured questionnaire was employed to obtain demographic data of study subjects.

Sample Collection and Laboratory Procedures
5ml of venous blood was collected, duly labeled and allowed to clot and sera carefully separated into cryovials. The reagents include 3rd generation ELISA, HCV antibody kit aspartate and Alanine, amines transferase substrate, pyruvate standard solution 66.7µmoles/mn/L Dv. For ash, 0.04N NaOH, Dinitrophenyl hydrazine solution DNPH. HCV antibodies were detected using third generation Enzyme Linked Immunosorbent Assay, HCV antibody kit consisting of HCV recombinant specific antigen.

Laboratory Assay
The samples were tested for the presence of HCV infection using adsorption qualitative technique base on the principle of antigen-antibody reaction. The enzyme was assayed according to the method of Reitman and Frankel (1957). The test and interpretation of the results were carried out according to the manufacturer's specifications (Egah et al., 2007; Khattak et al., 2008). The data were summarized as frequency tables and compared by chi-square tests.
Table 5: Serum alanine aminotransferase

<table>
<thead>
<tr>
<th>Total No of subject</th>
<th>ALT Normal</th>
<th>ALT Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive HCV(62)</td>
<td>47(75.8%)</td>
<td>15(24.2%)</td>
</tr>
<tr>
<td>Negative HCV(138)</td>
<td>138(100%)</td>
<td>0(0%)</td>
</tr>
<tr>
<td>Total(200)</td>
<td>185(92%)</td>
<td>15(8%)</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 2.545, \text{Df} = 1, \text{P value} = 0.000 \]

**DISCUSSION**

Table 1 shows that out of the 136 alcoholic subjects, 58(42.6%) were positive for HCV, while 4(6.3%) of the 64 non-alcoholic subjects were positive. This indicates that there is a higher risk of HCV infection in alcoholic subjects compared to the non-alcoholic subjects which have only 6.3% positivity. This is similar to previous reports where serum markers of HCV infection were detected in up to 36% of Brazilian patients with alcoholic cirrhosis (Strauss et al., 1992; Cavazola et al., 1994; Stephen et al., 2013).

Table 2 indicates that ages 41 to 50 have the highest prevalence of HCV (47.4%) followed by ages 21 to 30 with 34.3% prevalence and ages 31 to 40 with 25.7% prevalence. This is different from the work of Amin et al. (2004) who stated that subjects with 20-24 years mean age group had the highest HCV transmission prevalence rate. This difference could be due to the fact that the elderly in the study area have the habit of preventing the younger ones from consuming alcohol and they seem to be more financially buoyant to afford alcohol than the young ones. Table 3 shows that 27(33.3%) of 80 males were positive for HCV while 35(29.4%) of 119 females were also positive. This indicates that there is no significant difference in prevalence with gender. This could be because both male and female in the study area are free to consume alcohol without restriction. This corresponds with the work of Becker et al. (1996) who reported similar findings.

Table 4 shows 4(8%) of 50 subjects with history of blood transfusion positive for HCV while 2(6.7%) of 30 subjects with history of surgical operation. This indicates that there is no statistical significant in the prevalence of HCV in both subjects groups screened. This result agrees with the research done by Alter et al. (1999) where he found that HCV infection can easily be transmitted through blood transfusion and that surgical operation can be predisposed factor when equipment used are not properly sterilized. Table 5 shows that 15(24.2%) of 62 subjects positive for HCV have elevated level of ALT while of 138 subjects that tested negative for HCV all have normal level of ALT. This implies that HCV causes elevated level of ALT. This could be due to severe liver damage. This agrees with the research done by Coelho-Little (1995) where he found that people with more severe liver disease are considerably more likely to test positive for HCV infection than those with less severe liver disease.

**CONCLUSION**

This study shows that out of 136 alcoholic subjects 58(42.6%) were positive for HCV while only 4(6.2%) of the 64 non-alcoholic subjects were positive (Table 1). This indicates higher risk of HCV infection in alcoholic subjects compared to non-alcoholic subjects. Table 5 shows that 15(24.2%) of 62 subjects positive for HCV have elevated level of ALT. This could be due to liver damage.

**REFERENCES**


